



Missouri  
Department of  
Natural Resources

Use Attainability Analysis

for

WBID 3232 Pogue Creek

Submitted by  
Olsson Associates

To  
Missouri Department of Natural Resources  
Water Protection Program

On

October 14, 2008

## Field Data Sheets for Recreational Use Stream Surveys

### **Data Sheet A – Water Body Identification**

#### **I. Water Body Information** (for water body being surveyed)

Water Body Name (from USGS 7.5' quad): Pogue Cr.
Missouri Water Body Identification (WBID) Number: 3232
8-digit HUC: 11070207
County(ies), Listed Upstream to Downstream: Barry
Upstream Legal Description (from Table H): 32, 24N, 28
Downstream Legal Description (from Table H): Mouth
Number of sites evaluated: 3
List all site numbers, <u>consecutively upstream to downstream</u> :  1, 2, 3
<b>Include a Site Location Map(s).</b> The map must include all requirements detailed in the <i>Missouri Recreational Use Attainability Analyses: Water Body Survey and Assessment Protocol</i> (Section IV.D.8.a).

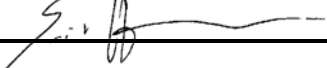
#### **II. Facility Information** (list all permitted discharges to this water body segment)

Facility Name(s) and Permit Number(s):  Georges Inc. Cassville Pro MO0108618  <b>Butterfield WWTF MO 0126292</b>
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#### **III. UAA Surveyor** (please **PRINT** legibly)

Name of Surveyor: Eric Hertzler	Telephone Number: 417-890-8802
Organization/Employer: Olsson Associates	

**Please verify that you have completed all sections of all data sheets, checked all applicable boxes, provided a map (that includes all requirements listed in the *Missouri Recreational Use Attainability Analyses: Water Body Survey and Assessment Protocol*) and that this form is complete.**

**Signed:**  **Date:** 08-19-08



**MISSOURI RECREATIONAL  
USE ATTAINABILITY ANALYSIS**



Feet  
0 1,000 2,000  
1 in. equals 2,000 ft.

**Stream:** Pogue Cr.  
**WBID:** 3232

**Map Sheet:** 1/1  
**County:** Barry

**OLSSON**  
ASSOCIATES

Project No. 008-1298

Site # 1**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 1 of 3)

(must be completed for each site)

<b>Date &amp; Time:</b> 08-19-08	3:12 p.m.	Location Description (e.g., road crossing): Farm Rd. 2120 Bridge crossing
<b>Stream Name:</b> Pogue Cr.		
Current Weather Conditions: cloudy		Facility Name(s): Georges Inc. Cassville Pro Butterfield WWTF
Weather Conditions for Past 10 days: 2.08" @ Cassville		Permit Number(s): MO0126292
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>		

**Site Location:**

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)				
Site 01	Easting (UTM X): 412393	Northing (UTM Y): 4068261	Horizontal Accuracy: (EPE / FOM / PDOP)	29 ft. <del>Meters</del>
Site 11	Easting (UTM X): 412230	Northing (UTM Y): 4068314	Horizontal Accuracy: (EPE / FOM / PDOP)	42 ft. <del>Meters</del>

**Photos:**

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3232-1-A	Upstream looking down				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3232-1-B	Downstream looking up				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

**Uses Observed\*:** (Uses actually observed at the time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use <i>Data Sheet D- Recreational Use Interview</i> when conducting interviews.)				

Site # 1**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 2 of 3)**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments:				

**Evidence of Human Use\*:** (Attach photos and reference in "Photos" section.)

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input type="checkbox"/> None of the above	Comments / Other: Farm Rd. 2120 Bridge @upstream end of transect			

**Substrate\*:** (These values should add up to 100%.)

% Cobble	80% Gravel	20% Sand	% Silt	% Mud/Clay	% Bedrock
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**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site.)

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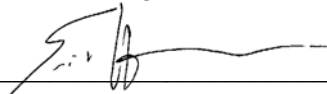
**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Site # 1**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 3 of 3)**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**Printed Names of Personnel Collecting Data: Eric HertzlerSurveyor's Signature:  Date of Survey: 08-19-08Organization: Olsson Associates Position: Field Service

# Field Data Sheets for Recreational Use Stream Surveys

## Data Sheet C - Field Survey Results

Stream Name: <u>Pogue Cr.</u>		Waterbody ID: <u>3232</u>		Site #: <u>1</u>	
Estimated Channel Incision: <u>0.15</u> (m) (height between low bank width and water)					
GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)					
<b>01</b> UTM X: <u>412393</u>		UTM Y: <u>4068261</u>		+/- <u>29</u> ft. ( <del>meters</del> )	
<b>11</b> UTM X: <u>412230</u>		UTM Y: <u>4068314</u>		+/- <u>42</u> ft. ( <del>meters</del> )	
Average Stream Width: <u>5</u> (meters)			Length of Survey Segment: <u>150</u> (meters)		
(To determine Length of Reach)			(20x average stream width)		
Field Staff: <u>Eric Hertzler / Austin Lohkamp</u>					

Dissolved Oxygen	
Date: <u>08-19-08</u>	Time: <u>3:15 p.m.</u>
Dissolved Oxygen: <u>10.07</u> (mg/L)	
Dissolved Oxygen: <u>106.3</u> (% sat)	
Specific Cond: <u>347</u> (µS/cm)	
Water Temperature: <u>17.8</u> (°C)	

### Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0.62	0.05	0.57	0.05	0.34	0.05	0.48	0.54	0.35	0.15	0.72	0.08	0.33	0.17	0.60	0.53	0.59	0.13	0.50	0.10	0.33	0.10
	1.24	0.11	1.14	0.13	0.68	0.05	0.96	0.53	0.70	0.22	1.44	0.05	0.66	0.18	1.20	0.54	1.18	0.22	1.00	0.14	0.66	0.21
	1.86	0.25	1.71	0.21	1.02	0.09	1.44	0.45	1.05	0.21	2.16	0.05	0.99	0.22	1.80	0.50	1.77	0.35	1.50	0.15	0.99	0.23
	2.48	0.11	2.28	0.27	1.36	0.10	1.92	0.31	1.40	0.40	2.88	0.05	1.32	0.30	2.40	0.57	2.36	0.57	2.00	0.20	1.32	0.20
	3.10	0.09	2.85	0.09	1.70	0.13	2.40	0.12	1.75	0.60	3.60	0.07	1.65	0.21	3.00	0.53	2.95	0.64	2.50	0.21	1.65	0.28
	3.72	0.13	3.42	0.05	2.04	0.20	2.88	0.10	2.10	0.84	4.32	0.12	1.98	0.20	3.60	0.47	3.54	0.71	3.00	0.24	1.98	0.24
	4.34	0.11	3.99	0.05	2.38	0.22	3.36	0.09	2.45	1.00	5.04	0.17	2.31	0.13	4.20	0.40	4.13	0.79	3.50	0.20	2.31	0.17
	4.96	0.13	4.56	0.05	2.72	0.19	3.84	0.00	2.80	0.77	5.76	0.16	2.64	0.09	4.80	0.25	4.72	0.72	4.00	0.21	2.64	0.05
	5.58	0.08	5.13	0.05	3.06	0.20	4.32	0.00	3.15	0.75	6.48	0.13	2.97	0.05	5.40	0.23	5.31	0.63	4.50	0.28	2.97	0.05
6.20	0.00	5.70	0.00	3.40	0.00	4.80	0.00	3.50	0.00	7.20	0.00	3.30	0.00	6.00	0.00	5.90	0.00	5.00	0.00	3.30	0.00	
Feature Type (rifle, run, or pool)	Rifle		Rifle		Rifle		Rifle		Pool		Rifle		Rifle		Rifle		Pool		Rifle		Rifle	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width  
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.  
Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)  
Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)  
All measurements to be taken to the nearest 0.01 meter.

MAXIMUM 1.00  
MEDIAN 0.18

Surveyor's Signature:



WBID # 3232Site # 2**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 1 of 3)

(must be completed for each site)

<b>Date &amp; Time:</b> 08-19-08 3:53 p.m.	Location Description (e.g., road crossing): Farm Road 1045 Bridge Crossing
<b>Stream Name:</b> Pogue Cr.	
Current Weather Conditions: Cloudy	Facility Name(s) Georges Inc Cassville Pro Butterfield WWTF:
Weather Conditions for Past 10 days: 2.08" @ Cassville	Permit Number(s): MO 0126292
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

**Site Location:**

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): 411544	Northing (UTM Y): 4068782	Horizontal Accuracy: (EPE / FOM / PDOP)	109 ft.	<del>Meters</del>
Site 11	Easting (UTM X): 411452	Northing (UTM Y): 4068855	Horizontal Accuracy: (EPE / FOM / PDOP)	123 ft.	<del>Meters</del>

**Photos:**

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3232-2-A	Upstream looking down				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3232-2-B	Downstream looking up				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

**Uses Observed\*:** (Uses actually observed at the time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use <i>Data Sheet D- Recreational Use Interview</i> when conducting interviews.)				



Site # 2

**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 2 of 3)**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments:				

**Evidence of Human Use\*:** (Attach photos and reference in "Photos" section.)

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input type="checkbox"/> None of the above	Comments / Other: Bridge (farm road 1045) @ upstream end of transect			

**Substrate\*:** (These values should add up to 100%.)

% Cobble	80% Gravel	20% Sand	% Silt	% Mud/Clay	% Bedrock
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**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site.)

Moss (very little) on rocks.
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**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Site # 2**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 3 of 3)**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

**Comments:** (Please record any additional comments here.)**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**Printed Names of Personnel Collecting Data: Eric HertzlerSurveyor's Signature:  Date of Survey: 08-19-08Organization: Olsson Associates Position: Field Service

# Field Data Sheets for Recreational Use Stream Surveys

## Data Sheet C - Field Survey Results

Stream Name: <u>Pogue Cr.</u> Waterbody ID: <u>3232</u> Site #: <u>2</u>																<b>Dissolved Oxygen</b>						
Estimated Channel Incision: _____ (m) (height between low bank width and water)																Date: <u>08-19-08</u> Time: <u>3:55 p.m.</u>						
GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)																Dissolved Oxygen: <u>9.98</u> (mg/L)						
<b>01</b> UTM X: <u>411544</u> UTM Y: <u>4068782</u> +/- <u>109 ft.</u> (meters)																Dissolved Oxygen: <u>105.4</u> (% sat)						
<b>11</b> UTM X: <u>411452</u> UTM Y: <u>4068855</u> +/- <u>123 ft.</u> (meters)																Specific Cond: <u>301</u> (µS/cm)						
Average Stream Width: <u>5.5</u> (meters)      Length of Survey Segment: <u>150</u> (meters)																Water Temperature: <u>17.9</u> (°C)						
(To determine Length of Reach) (20x average stream width)																						
Field Staff: <u>Austin Lohkamp / Eric Hertzler</u>																						
<b>Transect Cross-Section</b>																						
<b>01</b>		<b>02</b>		<b>03</b>		<b>04</b>		<b>05</b>		<b>06</b>		<b>07</b>		<b>08</b>		<b>09</b>		<b>10</b>		<b>11</b>		
Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	
<b>Station</b>																						
<b>Left Bank</b>																						
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	0.56	0.13	0.42	0.10	0.44	0.05	0.66	0.31	0.62	0.05	0.59	0.05	0.76	0.12	0.59	0.10	0.42	0.05	0.44	0.09	0.25	0.05
2	1.12	0.30	0.84	0.22	0.88	0.05	1.32	0.17	1.24	0.14	1.18	0.07	1.52	0.10	1.18	0.12	0.84	0.08	0.88	0.21	0.50	0.27
3	1.68	0.18	1.26	0.37	1.32	0.07	1.98	0.23	1.86	0.12	1.77	0.05	2.28	0.07	1.77	0.24	1.26	0.17	1.32	0.19	0.75	0.23
4	2.24	0.20	1.68	0.33	1.76	0.13	2.64	0.30	2.48	0.23	2.36	0.08	3.04	0.08	2.36	0.27	1.68	0.23	1.76	0.20	1.00	0.40
5	2.80	0.11	2.10	0.32	2.20	0.10	3.30	0.22	3.10	0.25	2.95	0.12	3.80	0.12	2.95	0.33	2.10	0.22	2.20	0.22	1.25	0.32
6	3.36	0.17	2.52	0.27	2.64	0.21	3.96	0.23	3.72	0.32	3.54	0.17	4.56	0.14	3.54	0.42	2.52	0.17	2.64	0.19	1.50	0.25
7	3.92	0.12	2.94	0.24	3.08	0.23	4.62	0.24	4.34	0.37	4.13	0.26	5.32	0.22	4.13	0.30	2.94	0.14	3.08	0.23	1.75	0.16
8	4.48	0.20	3.36	0.25	3.52	0.26	5.28	0.14	4.96	0.41	4.72	0.31	6.08	0.24	4.72	0.21	3.36	0.10	3.52	0.14	2.00	0.11
9	5.04	0.17	3.78	0.05	3.96	0.23	5.94	0.25	5.58	0.39	5.31	0.32	6.84	0.27	5.31	0.12	3.78	0.06	3.96	0.13	2.25	0.10
<b>Right Bank</b>																						
5.60	0.00	4.20	0.00	4.40	0.00	6.60	0.00	6.20	0.00	5.90	0.00	7.60	0.00	5.90	0.00	4.20	0.00	4.40	0.00	2.50	0.00	
Riffle		Riffle		Riffle		Riffle		Pool		Pool		Riffle		Riffle		Riffle		Riffle		Riffle		
Feature Type (rifle, run, or pool)																						

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width  
 GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.  
 Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)  
 Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)  
 All measurements to be taken to the nearest 0.01 meter.

MAXIMUM      0.42  
 MEDIAN      0.20

Surveyor's Signature:



Date: 08-19-08

WBID # 3232Site # 3**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 1 of 3)

(must be completed for each site)

<b>Date &amp; Time:</b> 08-19-08 4:36 p.m.	Location Description (e.g., road crossing): Farm Road 1040 Bridge crossing
<b>Stream Name:</b> Pogue Cr.	
Current Weather Conditions: Cloudy	Facility Name(s): Georges Inc Cassville Pro Butterfield WWTF
Weather Conditions for Past 10 days: 2.08" @ Cassville	Permit Number(s): MO 0126292
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

**Site Location:**

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)				
Site 01	Easting (UTM X): 409908	Northing (UTM Y): 4069283	Horizontal Accuracy: (EPE / FOM / PDOP)	21 ft. <del>Meters</del>
Site 11	Easting (UTM X): 409771	Northing (UTM Y): 4069221	Horizontal Accuracy: (EPE / FOM / PDOP)	70 ft. <del>Meters</del>

**Photos:**

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3232-3-A	Upstream looking down				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3232-3-B	Downstream looking up				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3232-3-C	Bridge with pool				

**Uses Observed\*:** (Uses actually observed at the time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use <i>Data Sheet D- Recreational Use Interview</i> when conducting interviews.)				

**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 2 of 3)**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments:				

**Evidence of Human Use\*:** (Attach photos and reference in "Photos" section.)

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input type="checkbox"/> None of the above	Comments / Other:			
Farm road 1040 Bridge crossing @ upstream end of transect. See photo 3232-3-C				

**Substrate\*:** (These values should add up to 100%.)

% Cobble	80% Gravel	20% Sand	% Silt	% Mud/Clay	% Bedrock
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**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site.)

Moss on rocks
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**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input checked="" type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other: Small Amts. Of Foam

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Site # 3**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B – Site Characterization** (Page 3 of 3)**Additional Stream Morphology:** (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
Pool	1	20	15	.30	+1

**Comments:** (Please record any additional comments here.)

Pool under farm road 1040 bridge. Over 1meter in depth. See photo 3232-3-C

**Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.**

Printed Names of Personnel Collecting Data: Eric HertzlerSurveyor's Signature:  Date of Survey: 08-19-08Organization: Olsson Associates Position: Field Service

# Field Data Sheets for Recreational Use Stream Surveys

## Data Sheet C - Field Survey Results

Stream Name: <u>Pogue Cr.</u>		Waterbody ID: <u>3232</u>		Site #: <u>3</u>	
Estimated Channel Incision: <u>0.15</u> (m) (height between low bank width and water)					
GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)					
<b>01</b>	UTM X:	<u>409908</u>	UTM Y:	<u>4069283</u>	+/- <u>21 ft.</u> ( <del>meters</del> )
<b>11</b>	UTM X:	<u>409771</u>	UTM Y:	<u>4069221</u>	+/- <u>70 ft.</u> ( <del>meters</del> )
Average Stream Width: <u>6</u> (meters)			Length of Survey Segment: <u>150</u> (meters)		
(To determine Length of Reach) (20x average stream width)					
Field Staff: <u>Eric Hertzler Austin Lohkamp</u>					

Dissolved Oxygen	
Date: <u>08-19-08</u>	Time: <u>4:41 p.m.</u>
Dissolved Oxygen: <u>9.45</u> (mg/L)	
Dissolved Oxygen: <u>111.6</u> (% sat)	
Specific Cond: <u>371</u> (µS/cm)	
Water Temperature: <u>19.2</u> (°C)	

		Transect Cross-Section																					
		01		02		03		04		05		06		07		08		09		10		11	
		Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Station																							
Left Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1	0.39	0.09	0.47	0.06	0.65	0.12	0.57	0.11	0.48	0.60	0.44	0.59	0.58	0.22	0.38	0.74	1.00	0.40	1.00	0.53	0.76	0.11
	2	0.78	0.14	0.94	0.10	1.30	0.20	1.14	0.13	0.96	0.57	0.88	0.58	1.16	0.23	0.76	0.70	2.00	0.32	2.00	0.54	1.52	0.19
	3	1.17	0.27	1.41	0.15	1.95	0.75	1.71	0.16	1.44	0.35	1.32	0.46	1.74	0.21	1.14	0.56	3.00	0.30	3.00	0.32	2.28	0.27
	4	1.56	0.40	1.88	0.21	2.60	0.20	2.28	0.20	1.92	0.24	1.76	0.32	2.32	0.21	1.52	0.54	4.00	0.06	4.00	0.11	3.04	0.31
	5	1.95	0.55	2.35	0.28	3.25	0.17	2.85	0.19	2.40	0.15	2.20	0.23	2.90	0.16	1.90	0.56	5.00	0.05	5.00	0.05	3.80	0.37
	6	2.34	0.67	2.82	0.46	3.90	0.12	3.42	0.21	2.88	0.13	2.64	0.12	3.48	0.17	2.28	0.52	6.00	0.13	6.00	0.05	4.56	0.39
	7	2.73	0.68	3.29	0.53	4.55	0.16	3.99	0.26	3.36	0.05	3.08	0.07	4.06	0.14	2.66	0.40	7.00	0.17	7.00	0.05	5.32	0.50
	8	3.12	0.56	3.76	0.54	5.20	0.21	4.56	0.17	3.84	0.05	3.52	0.05	4.64	0.11	3.04	0.24	8.00	0.14	8.00	0.05	6.08	0.53
	9	3.51	0.54	4.23	0.47	5.85	0.31	5.13	0.00	4.32	0.05	3.96	0.05	5.22	0.07	3.42	0.05	9.00	0.23	9.00	0.07	6.84	0.49
Right Bank		3.90	0.00	4.70	0.00	6.50	0.00	5.70	0.00	4.80	0.00	4.40	0.00	5.80	0.00	3.80	0.00	10.00	0.00	10.00	0.00	7.60	0.00
Feature Type (rifle, run, or pool)		Riffle		Riffle		Run		Run		Riffle		Riffle		Riffle		Riffle		Riffle		Riffle		Riffle	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width  
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.  
Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)  
Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)  
All measurements to be taken to the nearest 0.01 meter.

MAXIMUM 0.75

MEDIAN 0.18

Surveyor's Signature:





